The Effect of an Informative Leaflet on Preoperative Anxiety and Patient's Knowledge of Anesthesia and Anxiety

Hasta Bilgilendirme Broşürünün Preoperatif Anksiyete ve Anestezi Bilgisi Üzerine Etkisi

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Özet

Amaç: Anesteziyoloji, genel toplum tarafından az bilinen bir tıbbi uzmanlık dalıdır. Her ne kadar gelişmiş ülkelerde hastaların %60-90 kadarı "anestezistin" tıp doktoru olduğunu biliyor olsa da, bu oran gelişmekte olan ülkelerde sadece %50 civarındadır. Bu çalışmanın amacı, basit ve okunabilir bir broşürün hastaların anesteziyle ve anestezistlerin sorumluluklarıyla ilgili bilgi düzeyinde gelişme sağlayıp sağlayamayacağını değerlendirmektir. Gereç ve Yöntem: Üniversite etik kurul onayı alındıktan sonra, anestezi polikliniğine yönlendirilen 815 hasta çalışmaya dahil edildi. Gönüllü hastalara, preoperatif muayene esnasında anestezi ve anestezistler hakkında basit bir anket uygulandı, daha sonra hastalara ameliyatları öncesi bilgilendirici broşürleri okuması söylendi. Ameliyattan bir gün sonra tüm hastalar serviste aynı anketi yeniden doldurdu. Hastaların preoperatif ve postoperatif anketlere verdikleri cevaplar kaydedildi. Bulgular: Preoperatif dönemde hastaların %83.1'i (n=677) broşürü okudu. Broşürü okuma, eğitim düzeyi ve yaşla direkt olarak ilişkiliydi ($p<0.05$). Preoperatif ve postoperatif cevaplar karşılaştırıldığında şu sorularda belirgin fark vardı; "anestezi bilgisi", "anestezi doktoru nerede çalışır", "anestezi tekniği hakkında bilgi", "anestezi doktoru ne yapar", "anesteziyi kim uygular", "rejyonel anestezi bilgisi ve rejyonel anesteziyi kim uygular". Ayrıca anestezi korkusuyla ilgili şu sorulardada da belirgin fark vardı: "Öleceğim", "Mide bulantısı ve kusma endişesi" ($p<0.05$). Tartışma: Hastaların anestezi riskleri ve uygulaması hakkında az düzeydeki bilgisi önemli bir sağlık sorunudur. Çalışmamızda, preoperatif dönemde bir bilgilendirme broşürü kullanımının yararlı olabileceğini bulduk. Hastalarımızın çoğu, broşürü okuma konusunda uyumlu görünmüştür.

Anahtar Kelimeler

Anket; Anestezi Bilgisi; Anksiyete; Yazılı Materyal

Abstract

Aim: Anesthesiology is a medical specialty that is not well understood by the general public. Although in developed countries 60-90% of patients know that an "anesthesiologist" is a medical doctor, this ratio is only about 50% in developing countries. The aim of this survey is to assess if a simple and readable leaflet can improve patients' knowledge of anesthesia and of the responsibilities of anesthesiologists. Material and Method: After university ethics committee approval, 815 patients admitted to an anesthesia clinic were included in the study. Patients who gave their consent filled out a simple questionnaire about anesthesia and anesthesiologists at the time of their preoperative examination. Patients were then asked to read an information leaflet before their surgeries. The day after surgery, all patients answered the same questionnaire at the ward. Patients' answers to the preoperative and postoperative questionnaires were recorded. Results: Preoperatively 83.1% (n=677) of the patients read the leaflet. Reading the leaflet was directly correlated to educational level and age ($p<0.05$). When we compare the preoperative and postoperative answers, there were significant differences for these questions: "anesthesia knowledge", "where anesthesia doctor works", "knowledge of anesthesia technique", "what an anesthesia doctor does", "who applies anesthesia", "knowledge of regional anesthesia and who performs it". There was also a significiant difference for these questions concerning fear of anesthesia: "I will die" and "Fear about nausea and vomiting" ($p<0.05$). Discussion: The patients' poor knowledge of the risks and the practice of anesthesia is an important health problem. In the current study, a simple information leaflet read in the preoperative period managed to improve patients' knowledge of anesthesia. Most of our patients seemed to be comfortable with reading it.

Keywords

Questionaire; Knowledge of Anesthesia; Anxiety; Writing Material

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Introduction

Relative to other medical specialities, anesthesia is a medical field that is poorly understood by the general public. Patients have limited knowledge of an anesthesiologist's role in the operating room, in intensive care units, or for pain management [1,2]. In developed countries 60-90% of patients know that an "anesthesiologist" is a medical doctor; however this ratio is only about 50% in developing countries [3,4]. Even in a study conducted at a university hospital in Porto,Portugal, only 66.2% of the patients could identify the anesthesiologist as a specialist physician [5].

Previous studies concerning the knowledge and attitudes of patients about anesthesia and anesthesiologists have suggested that communication with patients during preoperative visits can enhance their confidence in the anesthetic procedure [6]. Although it is known that most of the patients prefer to receive detailed information about anesthetic technique and risks of the procedure, anesthesiologists usually have very limited time at preoperative examinations. In recent years, it has been posited that written material, such as a simple leaflet, could be useful in increasing patients' knowledge of anesthesia and anesthesiologists [7].

Although there are studies concerning the effect of preoperative information tools on patients' knowledge of "anesthesia" and "anesthesiologist" in the literature, these studies evaluate only the postoperative status of the patients [8,9]. In the current study, we aimed to achieve an objective result by administering the same questionnaire at both the preoperative and postoperative periods.

In this survey, our primary hypothesis is that a preoperative information leaflet can provide improvement in patients' knowledge of anesthesia and anesthesiologists. Our secondary hypothesis is that this information leaflet can reduce the patients' level of anxiety about anesthesia.

Materials and Methods

After Gaziosmanpasa University Ethics Committee approval, 815 patients admitted to the anesthesia clinic were included in the study. All the patients were older than 18 and had given written informed consent to participate in the survey. Patients younger than 18 and older than 80, or those having psychiatric disorders or problems in communication were excluded from the study. Prior to being given information about anesthesia and the procedure, all participants were asked to fill out a standardized questionnare based on the study of Demir et al. [10]. The questionnaire consisted of 26 questions in two parts. The first part included demographic data such as age, gender and level of education. The second part included multiple-choice questions such as working fields of anesthesiologists, different anesthesia techniques, and the patients' own fears related to anesthesia (Table 1).

After patients completed all 26 questions, each questionnaire was saved in an individual file and patients received a simple,information leaflet about anesthesia and the responsibilities of anesthesiologists. All participating patients were asked to read the leaflet before their operations. The day after their operations, whether or not they had read the leaflet, all patients were asked to fill out the same preoperative questionnaire in their wards. The patients' answers to both preoperative and postoperative questionnaires were recorded.

Table 1. The questionnaire form

1. Gender: Female/Male
2. Age: 18-25/26-33/34-41/42-49/50-..
3. Educational Level: Uneducated / Primaryschool / High school / University
4. Occupation:
5. Have you ever experienced anesthesia? Yes/No
6. Do you have a drug allergy? Yes / No
7. Why is the patient examined by an anesthesiologist?
To give information about their illnesses /To give information about their allergies/ To give information about
their medicines/ For pain relief/ To receive information about operation and anesthetic procedure/
All of them / I don'tknow
8.Where does an anesthesiologist work?
Clinic / Operating room / Intensive care unit / Pain therapy center/ Kidney stone breaking center
(Extracorporal Shock Wave Litotripsy), Endoscopy unit, Catheter angiography unit, Radiology unit/
I don'tknow
9. Which anesthesia techniques do you know?
General anesthesia / Local anesthesia / Regional anesthesia / I don'tknow
10. What are the responsibilities of an anesthesiologist during an operation?
Pain relief / Patient's conciousness and awareness under general anesthesia / Patient's blood pressure /
Patient's heart rate / Patient's oxygen level in blood / Replacement of fluid and blood loss /All of them/
I don'tknow
11.Accordig to your information who applies anesthesia?
Surgeon/ Nurse / Anesthesiologist / Anesthesia technician / I do not know
12.Who should give information about your anesthetic procedure?
Surgeon / Nurse / Anesthesiologist / Anesthesia technician / I don'tknow
13. What are your fears about general anesthesia?
Feeling pain during operation / Nausea and vomiting / Unable to wakeup after anesthesia / Remaining
unconscious / Sore throat / Unable to sleep completely during operation /
Saying undesirable words unconciously / Dying / I don't have any
14. Do you know anything about regional anesthesia? Yes / No
15. According to your information who performs regional anesthesia?
Anesthesiologist / Surgeon / Anesthesia technician / Nurse/ I don't know
16. What are your fears about regional anesthesia?
Feeling pain during operation / Becoming paralyzed / Being aware of operation / I don't have any

Statistical Analysis

The statistical analysis was performed using the SPSS 17 software package (Chicago, IL, USA). To determine the relationship between preoperative and postoperative responses to the multiple-choice questions, a paired cross-table was created. Chi-square test and Mc Nemar's test were applied.

Results

In total, 815 patients participated in the survey. The demographic data of the patients are listed in Table 2.

In the preoperative period, 83.1% of the patients (n=677) read the leaflet. The patients' decision to read the leaflet was directly correlated with educational level.The percentage reading the leaflet was 63.7% in the uneducated group, while it was 92.7% in those at university level ($p<0.05$).When we compared age groups, the reading ratio was highest (89.8%) in the 31-41 age group, and lowest (74.2%) in the group of patients over 61 years old ($p<0.05$) (Table 3).

When we compared the relation between occupation and reading the leaflet, the reading ratio was highest in the public employee group (92%).

When we compared the answers to preoperative and postoperative questionnaires, there were significant differences for almost all questions (Tables 4,5,6). The only exception was question

Table 2. The demographic data of the patients [n(%)]

Gender	Male 434 (53.3)	Female 381 (46.7)			
Age	18-30 251(30.8)	31-40 128(15.7)	41-50 159 (19.5)	51-60 145(17.8)	61-... 132(16.2)
Educational level	Uneducated 102(12.5)	Primary school 463(56.8)	High school 140(17.2)	University 110(13.5)	
Occupation	Housewife 323(39.6)	Public employee 112 (13.7)	Worker 192(23.6)	Student 49(9.0)	Other 139(17.1)
Anesthesia Experience	Yes 467(57.3)	No 348(42.7)			
Drug allergy	Yes 51(6.3)	No 764(93.7)			
Reading leaflet	Yes 677(83.1)	No 138(16.9)			

Table 3. The preference of leaflet reading amoung age [n(%)]

Age group	Reading Leaflet	Total	
	Yes	No	
18-30	220 (87.6)	31 (12.4)	251 (100.0)
31-41	115 (89.8)	13 (10.2)	128 (100.0)
41-50	136 (85.5)	23 (14.5)	159 (100.0)
51-60	108 (74.5)	37 (25.5)	145 (100.0)
Over 61	98 (74.2)	34 (25.8)	132 (100.0)
Total	677 (83.1)	138 (16.9)	815 (100.0)

number 13: "What are your fears about general anesthesia?" Most patients chose the same answer (Table 5). But, patients' fear of "nausea and vomiting" had increased and the fear of dying had decreased significantly ($p<0.05$). There was no difference for the "I have no fear" choice ($p>0.05$), but there was a significant difference between gender for this choice. Male patients marked "I have no fear" choice more frequently than female patients for both the preoperative and postoperative questionnaires ($p<0.05$).

Previous anesthesia experience did not have any effect on the patients' knowledge of anesthesia ($p>0.05$).

In the preoperative survey, there was no correlation between age and level of anesthesia knowledge ($p>0.05$). In the postoperative survey, the level of anesthesia knowledge significantly increased in all age groups ($p<0.05$).

There was no correlation between gender and the level of anesthesia knowledge in the preoperative or postoperative questionnaires ($p>0.05$).

Discussion

In the current study, a preoperative information leaflet improved patients' knowledge of anesthesia and anesthesiologists. The information leaflet was also correlated with significant decrease in patients' anxiety about anesthesia.

Troughout the world, patients usually meet their anesthesiologists for the first time at the preoperative examination, one day before surgery. The anesthesiologists often prefer to administer a quick check-up guide and to perform a specific physical examination during these visits. This is usually the first and may be the only opportunity for anesthesiologists to have contact with their patients [4]. However patients should receive adequate information about the procedure and the risks to give informed consent for a medical procedure. It is the anesthesiologist's responsibility to give detailed information and to be certain the patient understands explanations about procedures and associated risks [11]. An information leaflet may provide an effective help to anesthesiologists for this task.

Our study showed that most of the patients read the leaflet and were comfortable receiving information in this way. This tendency was correlated with educational level and age. The reading percentage was highest in the younger and more educated groups. This result is similar to previous studies [3,8]. Sagun et al. reported that patients with a higher educational level were found to be more curious about the anesthesia experience and tended to expend more effort to receive accurate information [8].

Table 4. Preoperative and postoperative answers for questions 7,8,9,10,14,16 ($p<0.05$ is significiant)

Question	Answer [n(%)]						
7	For illnesses	For allergies	For medicines	For pain	Anest. information	All	I don'tknow
Preoperative	391(48)	72(8.8)	59(7.2)	71(8.7)	33(4.0)	22(2.7)	371(45.5)
Postoperative	630 (77.4)	317(38.9)	209(25.7)	91(11.2)	36(4.4)	58(7.1)	84(10.3)
p	<0.05	<0.05	<0.05	>0.05	>0.05	<0.05	<0.05
8	Clinic	Operating room	Intensive Care	Pain Therapy	ESWL,Endoscopy	I don'tknow	
Preoperative	134(16.4)	324(39.8)	16(2.0)	5(0.6)	1(0.1)	405(49.7)	
Postoperative	499(61.2)	661(81.1)	140(17.2)	42(5.2)	9(1.1)	94(11.5)	
p	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
9	General anesthesia		Local anesthesia		Regional anesthesia	I don't know	
Preoperative	333(40.9)		116(14.2)		187(22.9)	446(54.7)	
Postoperative	639(78.4)		374(45.9)		531(65.2)	2(0.2)	
p	<0.05		<0.05		<0.05	<0.05	
10	Pain relief	Awareness	Blood pressure	Heart rate	Rep. fluid	O2 level	I don't know
Preoperative	267(32.8)	158(19.4)	77(9.4)	59 (7.2)	42 (5.2)	58 (7.1)	463 (56.8)
Postoperative	608(74.6)	502(61.6)	325(39.9)	256 (31.4)	191 (23.4)	228 (28)	117 (14.4)
p	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
14	Yes			No			
Preoperative	327 (40.1)			488 (59.9)			
Postoperative	665 (81.5)			151 (18.5)			
p	<0.05			<0.05			
16	Feeling pain		Becoming paralyzed		Aware of operation	I don't have any	
Preoperative	64 (7.9)		56 (6.9)		33 (4.0)	691 (84.8)	
Postoperative	150 (18.4)		100 (12.3)		88 (10.8)	529 (64.9)	
p	<0.05		<0.05		<0.05	<0.05	

Table 5. The answers of question 13 (p<0.05 is significiant).

Answer [n (%)]			p
	Preoperative	Postoperative	
Feeling pain	[257 (31.6)]	[261 (32.0)]	>0.05
Nausea and vomiting	[91 (11.2)]	[124 (15.2)]	<0.05
Unable to wake up	[88 (10.8)]	[71 (8.7)]	>0.05
Remain unconscious	[20 (2.5)]	[28 (3.4)]	>0.05
Sore throat	[23 (2.8)]	[25 (3.1)]	>0.05
Unable to sleep	[19 (2.3)]	[30 (3.7)]	>0.05
Saying undesirable things	[12 (1.5)]	[16 (2.0)]	>0.05
Dying	[41 (5.0)]	[26 (3.2)]	<0.05
I don't have any	[474 (58.2)]	[478 (58.7)]	>0.05

Table 6. The preoperative and postoperative answers for question 11,12,15 (p<0.05 is significant)

Question	Answer [n(%)]				
	Surgeon	Nurse	Anesthesi-ologist	Anest. Technician	I don't know
11					
Preoperative	110(13.5)	74(9.1)	282(34.7)	30(3.7)	335(41.1)
Postoperative	39(4.8)	32(3.9)	654(80.2)	81(9.9)	85(7.9)
p	<0.05	<0.05	<0.05	<0.05	<0.05
12					
Preoperative	152(13.5)	45(5.5)	339(41.6)	45(5.5)	260(31.9)
Postoperative	39(4.8)	24(2.9)	667(81.8)	74(9.1)	67(8.2)
p	<0.05	<0.05	<0.05	<0.05	<0.05
15					
Preoperative	54(6.6)	17(2.1)	213(26.1)	16(2.0)	515(63.2)
Postoperative	9(1.1)	9(1.1)	589(72.3)	23(2.8)	185(22.7)
p	<0.05	<0.05	<0.05	<0.05	<0.05

The effect of factors such as gender, age, educational level, and previous anesthesia experience on knowledge of anesthesia have been studied in recent years. In the study of Singla et al. no correlation was found between gender and knowledge of anesthesia [12]. Although Sagun et al. reported that female patients had higher levels of knowledge, the difference was not statistically significant [8]. In the current study, the results were similar to previous studies.

In some previous studies, a reverse relation was found between age and level of knowledge; elderly patients were reported to have less information about anesthesia [13,14]. There was no correlation between age and knowledge of anesthesia in our preoperative questionnaire. Our results are closely correlated with educational level. We don't know the distribution of educational level among age groups.

Results of studies concerning the relation between previous anesthesia experience and knowledge of anesthesia is conflicting. In a recent study by Nagrampa et al. patients with previous anesthesia experience had higher knowledge scores [15]; however in other studies this relation could not be determined [5,16,17]. In the current study, previous anesthesia experience had no effect on knowledge of anesthesia. The most probable reason is the lack of communication between patients and anesthesiologists at the previous surgeries.

It has been suggested that a reduction in preoperative anxiety level might be associated with better outcomes [18]. For this reason the American Society of Anesthesiologists (ASA) has given increasing importance to improving public perception of the anesthesiologists' role,with the goal of reducing preoperative anxiety [19]. But even in a study from a developed country, only 35% of the patients were found to understand the anesthesiologist's role in the intensive care unit (ICU) [20]. Tohmo et al. reported that Finnish patients thought anesthesiologists worked only in operating rooms and they did not know the role of anesthesiologists in ICU, emergency services, pain clinics, and during other invasive procedures [19]. An appropriate perception of the roles of anesthesiologists may be best improved during preoperative examinations. Although some studies have determined that detailed written leaflets or multimedia-assisted informed consents could not significantly reduce preoperative anxiety [21,22], Guo et al. reported that an information leaflet and verbal advice reduced preoperative anxiety significantly [23]. Additionally, in the study of van Zuuren et al., a single information brochure was reported to have reduced preoperative anxiety significantly [24]. In the current study, as the patients' knowledge level increased, fear of "nausea and vomiting" increased significantly, but patients' fear of dying decreased. The most probable reason for this is the patients' increased confidence in their anesthesiologists.

A previous study among Brazilian patients revealed several risk factors for preoperative anxiety. Malignancy experience, psychiatric disorders, self-perception, depression, trait-anxiety level, pain, smoking, extent of the proposed surgery, female gender, level of education, and physical status according to ASA constituted independent risk factors for high preoperative state-anxiety levels [25]. In the current study, female patients reported significantly higher anxiety levels in both preoperative and postoperative questionnares. This result is similar to previous studies.

Conclusion

Patients' poor knowledge of anesthesia and anesthesiologists is an important health problem. In the current study we found that a simple information leaflet can improve patients' knowledge of anesthesia and reduce anxiety levels in the preoperative period. Most of our patients seemed to be comfortable with reading the information leaflet.

Competing interests

The authors declare that they have no competing interests.

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